

**Amendments to the Claims:**

This listing of claims will replace all previous version, and listings, of claims in this application.

**Listing of Claims:**

1. (Currently amended) A compound which is:

3-Amino-*N*-(3-nitrophenyl)-6-[4-(pyrrolidin-1-ylsulfonyl)phenyl]pyrazine-2-carboxamide;

3-Amino-6-[4-(pyrrolidin-1-ylsulfonyl)phenyl]-*N*-1*H*-tetrazol-5-ylpyrazine-2-carboxamide;

*N*-[3-(Acetylamino)phenyl]-3-amino-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]-2-pyrazinecarboxamide, or

3-Amino-*N*-[3-(aminosulfonyl)phenyl]-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]-2-pyrazinecarboxamide;

as a free base or a pharmaceutically acceptable salt, ~~solvate or solvate of a salt~~ thereof;

3-Amino-6-[4-({[(1*R*)-2-methoxy-1-methylethyl]amino}sulfonyl)phenyl]-*N*-pyridin-3-ylpyrazine-2-carboxamide hydrochloride;

3-Amino-6-[4-({[(1*S*)-2-methoxy-1-methylethyl]amino}sulfonyl)phenyl]-*N*-pyridin-3-ylpyrazine-2-carboxamide hydrochloride;

3-Amino-6-(4-{[(2-ethoxyethyl)amino]sulfonyl}phenyl)-*N*-pyridin-3-ylpyrazine-2-carboxamide hydrochloride;

3-Amino-*N*-(2-methoxyphenyl)-6-{4-[(4-methylpiperazin-1-yl)sulfonyl]phenyl}pyrazine-2-carboxamide hydrochloride;

3-Amino-*N*-(4-methoxyphenyl)-6-{4-[(4-methylpiperazin-1-yl)sulfonyl]phenyl}pyrazine-2-carboxamide hydrochloride;

3-Amino-*N*-[2-(aminocarbonyl)phenyl]-6-{4-[(4-methylpiperazin-1-yl)sulfonyl]phenyl}pyrazine-2-carboxamide hydrochloride;

3-Amino-*N*-[3-(aminocarbonyl)phenyl]-6-{4-[(4-methylpiperazin-1-yl)sulfonyl]phenyl}pyrazine-2-carboxamide hydrochloride;

3-Amino-*N*-(3-cyanophenyl)-6-{4-[(4-methylpiperazin-1-yl)sulfonyl]phenyl}pyrazine-2-carboxamide hydrochloride;

3-Amino-*N*-(2-bromophenyl)-6-{4-[(4-methylpiperazin-1-yl)sulfonyl]phenyl}pyrazine-2-carboxamide hydrochloride;

3-Amino-*N*-(3-bromophenyl)-6-{4-[(4-methylpiperazin-1-yl)sulfonyl]phenyl}pyrazine-2-carboxamide hydrochloride;

3-Amino-6-{4-[(4-methylpiperazin-1-yl)sulfonyl]phenyl}-*N*-1*H*-pyrazol-3-ylpyrazine-2-carboxamide hydrochloride;

3-Amino-*N*-[4-(aminocarbonyl)-1*H*-pyrazol-3-yl]-6-{4-[(4-methylpiperazin-1-yl)sulfonyl]phenyl}pyrazine-2-carboxamide hydrochloride;

3-Amino-*N*-1*H*-imidazol-2-yl-6-{4-[(4-methylpiperazin-1-yl)sulfonyl]phenyl}pyrazine-2-carboxamide hydrochloride;

3-amino-6-[3-fluoro-4-[2-(4-morpholinyl)ethoxy]phenyl]-*N*-3-pyridinyl-2-pyrazinecarboxamide hydrochloride;

3-Amino-6-[4-[(1-ethyl-3-piperidinyl)amino]sulfonyl]phenyl]-*N*-3-pyridinyl-2-pyrazinecarboxamide hydrochloride;

3-Amino-6-[4-[[bis(2-methoxyethyl)amino]sulfonyl]phenyl]-*N*-3-pyridinyl-2-pyrazinecarboxamide hydrochloride;

3-Amino-6-[4-[(3-methylbutyl)amino]sulfonyl]phenyl]-*N*-3-pyridinyl-2-pyrazinecarboxamide hydrochloride;

3-Amino-6-[4-[[[(1*S*)-2-methoxy-1-methylethyl]amino]carbonyl]phenyl]-*N*-3-pyridinyl-2-pyrazinecarboxamide hydrochloride;

3-Amino-*N*-3-pyridinyl-6-[4-[[2-(1-pyrrolidinyl)ethyl]amino]carbonyl]phenyl]-2-pyrazinecarboxamide hydrochloride;

3-Amino-*N*-(3-methoxyphenyl)-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]-2-pyrazinecarboxamide hydrochloride;

*N*-(3-Acetylphenyl)-3-amino-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]-2-pyrazinecarboxamide hydrochloride, or

3-Amino-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]-*N*-[3-(trifluoromethyl)phenyl]-2-pyrazinecarboxamide hydrochloride;

or as a free base or an alternative pharmaceutically acceptable salt, ~~solvate or solvate of a salt~~ thereof.

2. (Previously presented) A pharmaceutical formulation comprising as active ingredient a therapeutically effective amount of the compound according to claims 1 or 27 in association with pharmaceutically acceptable carriers or diluents.

Claims 3 to 10. (Cancelled)

11. (Withdrawn) A method of prevention and/or treatment of conditions associated with glycogen synthase kinase-3, comprising administering to a mammal, including man in need of such prevention and/or treatment, a therapeutically effective amount of a compound defined in claims 1 or 27.

12. (Withdrawn) A method of prevention and/or treatment of dementia, Alzheimer's Disease, Parkinson's Disease, Frontotemporal dementia Parkinson's Type, Parkinson dementia complex of Guam, HIV dementia, diseases with associated neurofibrillar tangle pathologies and dementia pugilistica, comprising administering to a mammal, including man in need of such prevention and/or treatment, a therapeutically effective amount of a compound defined in claims 1 or 27.

13. (Withdrawn) The method according to claim 12, wherein the prevention and/or treatment is Alzheimer's Disease.

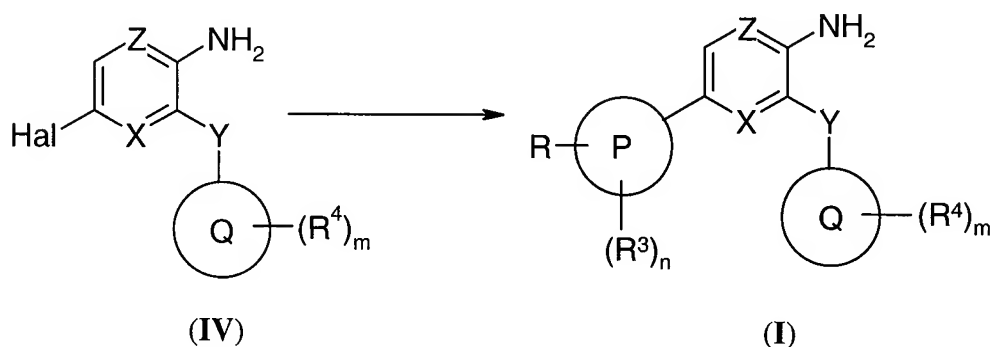
14. (Withdrawn) A method of prevention and/or treatment of amyotrophic lateral sclerosis, corticobasal degeneration, Down syndrome, Huntington's Disease, postencephalitic parkinsonism, progressive supranuclear palsy, Pick's Disease, Niemann-Pick's Disease, stroke, head trauma and other chronic neurodegenerative diseases, Bipolar Disease, affective disorders, depression, schizophrenia, cognitive disorders, hair loss, contraceptive medication, Type I and Type II diabetes, diabetic neuropathy and diabetes related disorders comprising administering to a mammal, including man in need of such prevention and/or treatment, a therapeutically effective amount of a compound defined in claims 1 or 27.

15. (Withdrawn) The method according to claim 14, wherein the prevention and/or treatment is Type I and Type II diabetes, diabetic neuropathy and diabetes related disorders.

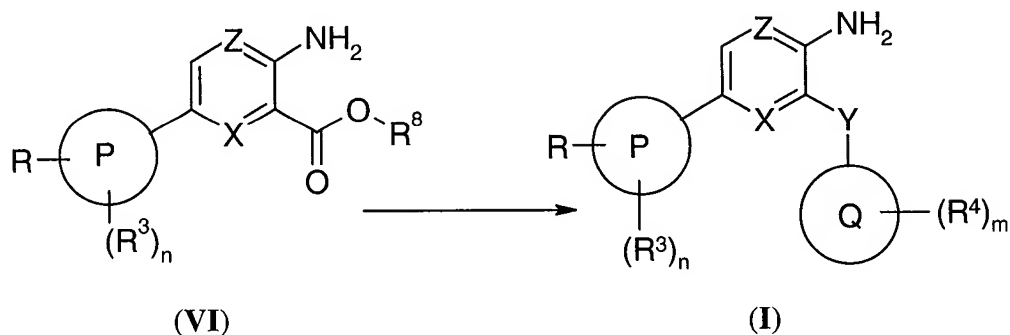
16. (Withdrawn) A method of prevention and/or treatment of predemented states, Mild Cognitive Impairment, Age-Associated Memory Impairment, Age-Related Cognitive Decline, Cognitive Impairment No Dementia, mild cognitive decline, mild neurocognitive decline, Late-Life Forgetfulness, memory impairment and cognitive impairment, vascular dementia, dementia with Lewy bodies, Frontotemporal dementia and androgenetic alopecia, comprising administering to a mammal, including man in need of such prevention and/or treatment, a therapeutically effective amount of a compound defined in claims 1 or 27.

17. (Withdrawn) A process for the preparation of a compound defined in claim 1 which falls under the general formula I, wherein Y, X, Z, P, Q, R, R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup>, R<sup>5</sup>, R<sup>6</sup>, R<sup>7</sup>, A, m and n are defined as in formula I, comprising of:

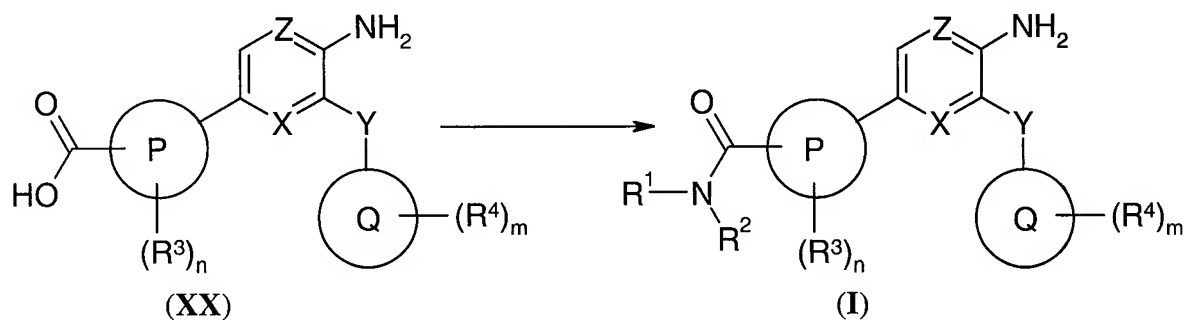
A) de-halogen coupling of a compound of formula IV where Hal is halogen with a appropriate aryl species to give a compound of formula I:



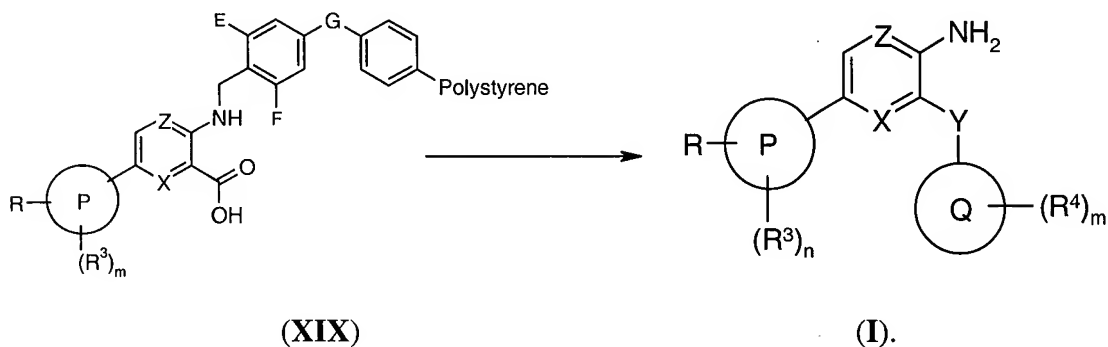
B) amidation of a compound of formula **VI** wherein  $R^8$  is  $C_{1-6}$ alkyl or hydrogen with the appropriate amine:



C) amidation of a compound of formula **XX**, with the appropriate amine to give a compound of formula **I**:

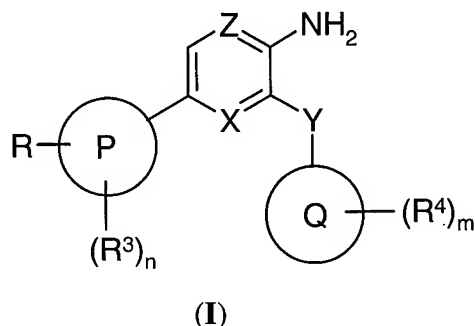


D) amidation of a compound of formula **XIX** with the appropriate amine and treating with coupling reagents:



Claims 18 to 26. (Cancelled)

27. (Currently amended) A compound of the generic formula I:



wherein:

Z is N;

Y is CONR<sup>5</sup>;

X is N;

P is phenyl;

Q is phenyl;

R is selected from C<sub>0-6</sub>alkyl(SO<sub>2</sub>)NR<sup>1</sup>R<sup>2</sup>, C<sub>0-6</sub>alkylCONR<sup>1</sup>R<sup>2</sup> and OC<sub>1-6</sub>alkylNR<sup>1</sup>R<sup>2</sup>;

R<sup>1</sup> and R<sup>2</sup> are independently selected from hydrogen, C<sub>1-6</sub>alkyl, C<sub>1-6</sub>alkylNR<sup>6</sup>R<sup>7</sup>, C<sub>1-6</sub>alkylOR<sup>6</sup> and a 5 or 6 membered heterocyclic ring containing one or more heteroatoms independently selected from N, O, or S and wherein said C<sub>1-6</sub>alkyl or heterocyclic ring may be optionally substituted by A have a C<sub>1-6</sub>alkyl substituent thereon;

R<sup>1</sup> and R<sup>2</sup> may together form a substituted 5 or 6 membered heterocyclic ring containing one or more heteroatoms independently selected from N, O, or S and said heterocyclic ring may be optionally substituted by A have a C<sub>1-6</sub>alkyl substituent thereon;

R<sup>3</sup> and R<sup>4</sup> is independently selected from halo, nitro, trifluoromethyl, C<sub>0-6</sub>alkylCN, C<sub>0-6</sub>alkylOR<sup>6</sup>, C<sub>0-6</sub>alkylCONR<sup>6</sup>R<sup>7</sup>, C<sub>0-6</sub>alkylNR<sup>6</sup>(CO)R<sup>7</sup>, C<sub>0-6</sub>alkylCOR<sup>6</sup>, C<sub>0-6</sub>alkyl(SO<sub>2</sub>)NR<sup>6</sup>R<sup>7</sup>;

m is 0 or 1;

n is 0 or 1;

R<sup>5</sup> is hydrogen;

R<sup>6</sup> and R<sup>7</sup> are independently selected from hydrogen and C<sub>1-6</sub>alkyl;

R<sup>6</sup> and R<sup>7</sup> may together form a substituted 5 or 6 membered heterocyclic ring containing one or more heteroatoms independently selected from N, O, or S one or more heteroatoms

independently selected from N, O or S and said heterocyclic ring may ~~be optionally substituted~~  
~~by A~~ have a C<sub>1-6</sub>alkyl substituent thereon;

~~A is C<sub>1-6</sub>alkyl;~~

as a free base or a pharmaceutically acceptable salt, ~~solvate or solvate of a salt~~ thereof.